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<b>(21) International Application Number:</b> PCT/US93/09345 <b>(22) International Filing Date:</b> 1 October 1993 (01.10.93)  <b>(30) Priority data:</b> 07/955,371 1 October 1992 (01.10.92) US 08/013,948 4 February 1993 (04.02.93) US  <b>(60) Parent Application or Grant</b> <b>(63) Related by Continuation</b> US Not Furnished (CIP)  <b>(71) Applicants (for all designated States except US):</b> THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK [US/US]; West 116th Street & Broadway, New York, NY 10027 (US); COLD SPRING HARBOR LABORATORY [US/US]; 1 Bungtown Road, Cold Spring Harbor, NY 11724 (US).	<b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only) :</b> STILL, W., Clark [US/US]; P.O. Box 815, Rhinebeck, NY 12572 (US). OHLMEYER, Michael, H., J. [GB/US]; 903 Deer Creek Drive, Plainsboro, NJ 08536 (US). WIGLER, Michael, H. [US/US]; One Walden Court, Lloyd Harbor, NY 11743 (US). DILLARD, Lawrence, W. [US/US]; 38-06 Fox Run Drive, Plainsboro, NJ 08536 (US). READER, John, C. [US/US]; 112 Biscayne Court #8, Princeton, NJ 08540 (US).  <b>(74) Agent:</b> WHITE, John, P.; Cooper & Dunham, 30 Rockefeller Plaza, New York, NY 10112 (US).  <b>(81) Designated States:</b> AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>	
<b>(54) Title:</b> COMPLEX COMBINATORIAL CHEMICAL LIBRARIES ENCODED WITH TAGS		
<b>(57) Abstract</b> <p>Encoded combinatorial chemistry is provided, where sequential synthetic schemes are recorded using organic molecules, which define choice of reactant, and stage, as the same or different bit of information. Various products can be produced in the multi-stage synthesis, such as oligomers and synthetic non-repetitive organic molecules. Conveniently, nested families of compounds can be employed as identifiers, where number and/or position of a substituent define the choice. Alternatively, detectable functionalities may be employed, such as radioisotopes, fluorescers, halogens, and the like, where presence and ratios of two different groups can be used to define stage or choice. Particularly, pluralities of identifiers may be used to provide a binary or higher code, so as to define a plurality of choices with only a few detachable tags. The particles may be screened for a characteristic of interest, particularly binding affinity, where the products may be detached from the particle or retained on the particle. The reaction history of the particles which are positive for the characteristic can be determined by the release of the tags and analysis to define the reaction history of the particle.</p>		